



HIEReady

Health information
exchange from
any system

For more information on
participating in HIE READY,
contact us at
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UCDAVIS
INSTITUTE FOR POPULATION
HEALTH IMPROVEMENT

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Introduction

Improving Health Care: The healthcare sector has lagged behind other industries in adopting new technologies in telecommunications and the dramatic advances in information management that have transformed American culture. U.S. health care still relies on antiquated methods of recording, storing and sharing medical information, leading to many of the now well-documented problems in care coordination, quality of services and patient safety.

Improving the quality of health care and coordination of services requires that medical information flow rapidly and securely between physicians' and other healthcare providers' offices, hospitals and other facilities. To achieve this requires widespread adoption of electronic health information exchange (HIE).

While there have been improvements in the flow of information that electronic health records (EHRs) make possible for ambulatory and in-patient practices, even certified EHRs often have limited capacity to share important care-related data with other EHRs. Upgrading EHRs so that information can be exchanged with other EHRs typically requires additional customization to create interfaces that allow the EHRs to communicate with each other. This requires additional expense and time.

To facilitate the adoption of HIE and help address the need for EHRs to “talk with each other,” the California Health eQuality (CHeQ) program, under the Institute of Population Health Improvement (IPHI) at UC Davis, has produced this ***HIE Ready Buyers' Guide*** to identify interoperability and interface features that should be in place to support healthcare data exchange *today*.

About the *HIE Ready Buyers' Guide*

The cost and time it takes to implement bi-directional interfaces so that EHRs of two or more healthcare professionals, organizations, or providers can fully communicate is a major hurdle. Meaningful Use provisions for Stage 1 and Stage 2 require a number of HIE capabilities. Those requirements, however, are limited and do not cover the full range of interoperability and interface features needed for robust HIE. Specifying a certified EHR is not enough to ensure it can also exchange the relevant information needed. The *HIE Ready* specifications permit healthcare providers to specify the level of interoperability they want in their EHR. The Buyers' Guide provides a way for healthcare providers to examine the EHR capabilities of a vendor's product, as well as the capabilities a Health Information Organization (HIO) offers.

This Buyers' Guide will help physicians, hospitals, and other healthcare providers make informed choices when discussing HIE capabilities with EHR vendors and HIOs. It allows purchasers to make side-by-side comparisons of important HIE features based on commonly accepted interoperability and interface standards embedded in the EHRs of the participants in *HIE Ready*. The Buyers' Guide also provides information on how well an HIO supports those same standards.

HIE Ready is a set of commonly accepted standards and features identified by CHeQ as capabilities that are available in many EHR and HIE systems, and provided by many HIOs. Additionally the deployment of these capabilities now will enable parties to exchange health information critical to care delivery.

HIE Ready is consistent with Stage 1 Meaningful Use and the current version of the Federal Office of the National Coordinator for Health Information Technology Authorized Testing and Certification Bodies (ONC-ATCB) for EHR technology. It also will be consistent with Stage 2 Meaningful Use and 2014 ONC-ATCB certification criteria.

Organizations participating in the Buyers' Guide recognize the importance of transparency and providing purchasers a straightforward, standardized way to evaluate their needs and product availability. These organizations have entered into a Memorandum of Understanding ("**MOU**"; See *Appendix A*) with IPHI and CHeQ that attests to their capabilities and pricing.

The Buyers' Guide reports on relative cost and six capabilities:

- Admit, Discharge, Transfer information (ADT)/demographics
- Laboratory and radiology results/notes
- Laboratory and radiology orders
- Referrals and appointments
- Care summary/continuity of care document (CCD)
- Public health reporting

Detailed information about the specific components within these capabilities can be found below in the MOU (*Appendix A*).

CHeQ understands that healthcare providers consider many factors in choosing the EHR or HIO best suited to their particular needs and practice environment. While most EHR systems may include the capacity to share the information specified in *HIE Ready*, it may be available through a complex list of optional components. *HIE Ready* gives healthcare providers a clear way to focus on the EHR features needed for their health information exchange.

Importantly, CHeQ does not endorse any particular vendor or HIE approach and provides this Buyers' Guide simply as a tool to facilitate comparison of the essential interoperability capabilities among the participating EHRs, HIOs and HIE technology vendors participating in *HIE Ready*.

The Buyers' Guide

Vendor or Organization <i>(Product name in italics)</i>	HIE READY Capabilities						Relative Cost
	ADT / Demographics	Lab & Rad Results, Notes	Lab & Rad Orders	Referrals, Appointments	Care Summary (CCD)	Public Health Reporting	
AMBULATORY EHRs ¹							
4medica <i>(Ambulatory Cloud iEHR 10.4)</i>	●	●●●	●●●	○	●●	●●●●	\$0
Data Strategies <i>(MDSuite 6.1)</i>	●●●●	●●●●	●●●●	●●●●	●●●	●●●●	\$0
Med A-Z <i>(Med A-Z)</i>	●●●	●●	●●●●	●	●●●●	●●●●	\$0
MedStreaming <i>(All inOne MR/PACS/PM)</i>	●●●●	●●●●	●●●●	●●●●	●●●●	●●●●	\$0
Mitochon <i>(Mitochon Systems 4.0)</i>	●	●●●	●	●	●●●	●●●●	\$0
OfficeAlly <i>(EHR 24/7)</i>	●	●●	●●●	●	●●●	●●●●	\$\$
HEALTH INFORMATION ORGANIZATIONS							
CVCA HIE <i>(previously EKCITA)</i>	●	●	●	●	●●●●	●●	\$\$\$
Inland Empire HIE	●	●	●●	●	●●	●●	\$
North Coast Health Information Network	●●	●●●	○	●	○	○	NP
Orange County Partnership RHIO	●●●	●●●●	●●●	○	●●●●	●●●●	NP
Redwood MedNet	●●●	●●●	●●●	●	●●●●	●●●●	\$\$\$
San Diego Regional HIE	●●●	●●●	○	●	●●	●	NP
Santa Cruz HIE	●	●●●	●●●●	●	●●	●	\$\$

HIE Ready: ○ No capability.
 ● to ●●●● HIE capability, from least capable, one ●, to most capable, four ●●●●

Costs: \$0 Some organizations offer *HIE Ready* at no additional cost.
 \$ to \$\$\$\$ Relative cost, from lowest cost, one \$, to highest cost, four \$\$\$\$

Note 1: All ambulatory EHR vendors have ONC-ATCB certified products for Stage 1 Meaningful Use.

About IPHI and CHeQ

The Institute for Population Health Improvement (**IPHI**) is committed to improving health and health security and to support activities that improve equity and eliminate disparities in health care for all Californians. IPHI envisions a world in which the many determinants of better health care align to promote and sustain optimal health and functionality of both individuals and their larger communities.

California Health eQuality (**CHeQ**) is a program within IPHI that is funded through a sixteen-month, \$17.5 million Interagency Agreement with the California Health and Human Services Agency (**CHHS**) to develop and implement HIE programs according to the State's Cooperative Grant Agreement with the ONC.

CHeQ's programs promote healthcare quality and coordination of care by:

- Expanding underserved communities' capacity to exchange health information and/or their access to Direct
- Improving sharing of immunization, laboratory, and care information, and
- Providing tools to assist healthcare providers in identifying private, secure, standardized and trusted systems to exchange health information

Kenneth W. Kizer, IPHI Director and Distinguished Professor, UC Davis School of Medicine and Betty Irene Moore School of Nursing, leads CHeQ. Dr. Kizer has a distinguished history of public and private sector experience in health information technology, healthcare quality improvement and population health. Among his previous activities in this regard, Dr. Kizer was founding President and CEO of the National Quality Forum, a Washington, DC-based quality improvement and consensus standards-setting organization. Before that Dr. Kizer served as the Under Secretary for Health, U.S. Department of Veterans Affairs, where he led the VA's transition to electronic health records and health information exchange in the late 1990s. He was also the Director of the former California Department of Health Services from 1985 to 1991, where he initiated a number of health information management modernization efforts.

UC Davis Health System is improving lives and transforming health care by providing excellent patient care, conducting groundbreaking research, fostering innovative, inter-professional education, and creating dynamic, productive partnerships with the community. The academic health system includes one of the country's best medical schools, a 631-bed acute-care teaching hospital, a 1,000-member physicians' practice group and the new Betty Irene Moore School of Nursing.

UCDHS is home to a National Cancer Institute-designated comprehensive cancer center, an international neurodevelopmental institute, a stem cell institute and a comprehensive children's hospital. Other nationally prominent centers focus on advancing telemedicine, improving vascular care, eliminating health disparities and translating research findings into new treatments for patients. Together, they make UC Davis a hub of innovation that is transforming health for all.

APPENDIX A

MEMORANDUM OF UNDERSTANDING

HIE Ready

This Memorandum of Understanding (“**AGREEMENT**”), establishes the framework for a collaborative agreement for the Health Information Exchange Project (“**HIE Ready**”) (the “**PROJECT**”) between the entity listed below (“**ENTITY**”) and The Regents of the University of California on behalf of its University of California Davis Health System, Institute for Population Health Improvement (“**UCDHS IPHI**”), (each a “**PARTY**” and collectively the “**PARTIES**”).

Entity Name:	
Type of Entity:	<input type="checkbox"/> Ambulatory EHR Vendor <input type="checkbox"/> Hospital Electronic Medical Record (EMR/EHR) Vendor <input type="checkbox"/> Health Information Exchange Organization (HIO) <input type="checkbox"/> Health Information Exchange (HIE) Vendor
Street Address:	
City, State, Zip:	
Point of Contact Name:	
E-mail & Phone:	
Alternate Contact Name:	
Alternate E-mail & Phone:	

1. PURPOSE

This AGREEMENT sets forth the *HIE Ready* requirements, as outlined in Exhibit A, attached hereto, and expectations of the PARTIES to offer a defined set of standards-based implementation specifications (“**SPECIFICATIONS**”) as indicated in Exhibit B, attached hereto, enabling data exchange between instances of Electronic Health Record (“**EHR**”) software and a Health Information Exchange Organization or another healthcare stakeholder (both referred to as “**HIO**”), which are involved in exchanging health information in the State of California.

2. BACKGROUND

The State of California has engaged UCDHS IPHI to develop and implement Health Information Exchange (“**HIE**”) programs as set forth in the state’s grant agreement with the Federal Office of the National Coordinator for Health Information Technology (“**ONC**”), U.S. Department of Health and Human Services. UCDHS IPHI is charged with developing services and innovations that make possible the appropriate, secure and efficient exchange of electronic health information for the purpose of improving health, health care safety, efficiency and access to health care for all Californians.

3. THE OPPORTUNITY

The adoption of certified EHR systems and the capability to connect and interoperate with HIOs and other interoperable EHR systems is or should be a concern to all stakeholders in a healthcare system. Historically each connection between an EHR and an HIO or other endpoints represents a significant expenditure of resources to develop custom interfaces, and thereby limiting the benefits to all stakeholders. Existing methods are costly, take time and often deliver only a small portion of possible benefits. Approaches such as point-to-point interfaces, the Direct Project, Integrating the Healthcare Enterprise and others exist, but have had limited adoption or are still in the standards development phase.

An opportunity exists to leverage current HL7 standards using interface and interoperability features already built into most EHR software to create SPECIFICATIONS that the PARTIES can support. The goal is to achieve a win-win approach for all stakeholders, based on a substantial adoption growth curve, by providing valuable connection capabilities and reducing the overall connection cost through the SPECIFICATIONS. The result will be a more robust EHR product with pre-integrated data sharing capabilities for healthcare providers that, in turn, will promote adoption of truly interoperable EHRs.

The potential for technology to support a larger transformation and enable HIE is increasingly apparent and the federally designated Regional Extension Centers (“**REC**”) in California provide critical technical assistance to the broadest range of providers. The work of HIOs is difficult and REC helps to promote health data liquidity to enable providers, patients, healthcare organizations and other stakeholders to ensure that the right information is available, for the right patient, at the right time, ensuring that the highest quality health care is delivered in the most cost-effective manner. True transformation will depend on the conversion of a traditional, disparate, paper-based system into a statewide health information network based on the electronic exchange of data serving the needs of patients, providers and health care decision makers. The goal is to work in collaboration and harness REC services that provide an increase of EHR adoption, dissemination of health Information Technology (“**IT**”) best practices and other health IT initiatives to strengthen HIE efforts.

While UCDHS IPHI proposes through this AGREEMENT a set of SPECIFICATIONS that EHR vendors, HIE vendors and HIOs can support today, the intent is to evolve and improve the PROJECT over time, ultimately leading to “plug-and-play” interoperability as envisioned by UCDHS IPHI, the ONC and the EHR | HIE Interoperability Workgroup.¹ The PARTIES to this AGREEMENT agree to support this process.

4. THE PROJECT

ENTITY as a participant in the PROJECT agrees to offer SPECIFICATIONS, as indicated in Exhibit B, to connect ambulatory and/or inpatient EHRs to HIOs and other endpoints. If ENTITY is an EHR vendor, said EHR vendor agrees to package and present products and services for rapid deployment as well as transparent pricing to the purchasers. The ultimate goal will be a fully operational, bi-directional connection between an EHR and an HIO or other endpoints that can be rapidly deployed at an affordable cost.

¹ Information on the EHR | HIE Interoperability Workgroup is found at www.interopwg.org.

5. JOINT RESPONSIBILITIES OF THE PARTIES:

- a. Promote the SPECIFICATIONS to health care stakeholders in California.
- b. Participate in PROJECT meetings, including calls, wiki or web collaboration sites arranged by the UCDHS IPHI California Health eQuality (“**CHeQ**”) program.
- c. Collaborate on an on-going basis regarding changes and enhancements to the SPECIFICATIONS as the industry finalizes new standards and improves existing standards.
- d. Support and promote the EHR | HIE Interoperability Workgroup which was organized by the New York eHealth Collaborative (“**NYeC**”), and cooperatively lead by NYeC and CHeQ.
- e. Support and promote the ONC supported National Association for Trusted Exchange (“**NATE**”) (formerly the Western States Consortium) in its efforts to develop policies and procedures for sharing data across state borders.
- f. Support events such as “California Connects” by attending and participating in a connect-a-thon like atmosphere to show stakeholders what is possible today using the SPECIFICATIONS as well as test new and emerging standards and capabilities.

6. ENTITY ROLES AND RESPONSIBILITIES:

- a. Determine the specific approach you wish to take in supporting the SPECIFICATIONS. Indicate your choice by selecting and completing the appropriate matrix as identified in Exhibit B, attached hereto. Note that the selected Exhibit B matrix will form the basis for how UCDHS IPHI communicates your level of commitment to the PROJECT and how UCDHS IPHI describes your product or services to EHR vendors, HIOs and healthcare providers.
- b. Actively promote the elements set forth in this AGREEMENT to your clients, employees, members or constituents, as appropriate.
- c. Offer HIE services and/or EHR software meeting the SPECIFICATIONS listed in Exhibit B at prices set to any healthcare stakeholder in California that is currently using a licensed EHR under maintenance from the EHR vendor or who has entered into an agreement to purchase an EHR from the EHR vendor.
- d. EHR vendors participating in REC Group Purchasing programs agree to offer HIE services and/or EHR software to REC members at pricing that is equal to or better than pricing currently included in Group Purchasing agreements.
- e. **ENTITY acknowledges and understands that participation in the PROJECT does not constitute UCDHS IPHI's endorsement of any products or services provided by ENTITY.**

7. UCDHS IPHI RESPONSIBILITIES:

- a. Collaborate and coordinate with REC in California for REC’s development and implementation of a marketing and outreach campaign, which includes branding, website and collateral intended for REC to promote the benefits of purchasing an EHR system from ENTITIES that have signed an *HIE Ready* AGREEMENT.
- b. In collaboration with the REC in California, create and publish a Buyers' Guide intended to educate and inform stakeholders of the HIE and interoperability capabilities that each of the EHR vendors and HIOs offer, and their relative costs.
- c. Convene meetings as described herein.

8. MODIFICATIONS

This AGREEMENT may be modified upon written agreement of the PARTIES. No oral statement by any person shall be interpreted as modifying or otherwise affecting the terms of this AGREEMENT. UCDHS IPHI reserves the right, for any reason, in its sole discretion, to terminate, change, suspend or discontinue any aspect of the PROJECT. UCDHS IPHI may restrict, suspend or terminate access to, or use of, the PROJECT, or remove any content, at any time, for any reason, or for no reason at all, without notice and without penalty.

9. NOTICE

All notices, requests, or other communications required under this AGREEMENT shall be in writing and shall be delivered to the respective PARTIES by personal delivery; by deposit in the United States Postal Service as certified or registered mail, postage prepaid, return receipt requested; or by a reputable overnight delivery service such as Federal Express. Notices shall be deemed delivered on the date of personal delivery, on the date indicated on the United States Postal Service return receipt, or on the date indicated by express mail receipt, as applicable. Notices shall be addressed to the PARTIES at the addresses set forth below:

For Legal Notice:

UCDHS IPHI:	ENTITY:
Health System Contracts	Name of Entity:
2315 Stockton Blvd., Sherman 2300	Name of Contact:
Sacramento, CA 5817	Address:
	City, State, Zip:

For PROJECT Matters:

UCDHS IPHI:	ENTITY:
Michael J. Hughes	Name of Entity:
IPHI, California Health eQuality	Name of Contact:
4800 2nd Avenue, Suite 2600	Address:
Sacramento, CA 95817	City, State, Zip:

Either PARTY may change its address by written notice to the other during the TERM.

10. USE OF UCDHS IPHI NAME

ENTITY shall not use the name or logos of the UCDHS IPHI, including but not limited to The Regents of the University of California, University of California or UC Davis, in any form or manner in any publicity, advertisements, reports or other information released to the public without the prior written approval of UCDHS IPHI.

11. ASSIGNMENT

UCDHS IPHI reserves the right to assign this AGREEMENT, assign its rights under this AGREEMENT, or delegate duties under this AGREEMENT without prior written consent of ENTITY. However, UCDHS IPHI may not assign this AGREEMENT to a competitor of ENTITY.

12. TERM AND TERMINATION

The TERM of this AGREEMENT is one (1) year from the EFFECTIVE DATE and shall renew automatically, unless a PARTY notifies the other PARTY at least 60 days prior to the end of the current term. Either PARTY may terminate this AGREEMENT at any time, with or without cause and without incurring any liability or obligation, by giving the other PARTY at least 60 days prior written notice of termination.

13. THE EXHIBITS

Exhibit A – *HIE Ready* Requirements

Exhibit B – Four Matrices of commitment to specific features, deliverables and costs for:

- I. Ambulatory EHR;
- II. Hospital Electronic Medical Record (EMR/EHR);
- III. Health Information Exchange Organization (HIO); and/or,
- IV. Health Information Exchange (HIE) Vendor

14. MARKETING CONTENT

To the extent ENTITY provides UCDHS IPHI with any marketing content (e.g., text, graphics, logos, artwork, data) in connection with the PROJECT (collectively, "**CONTENT**"), ENTITY hereby grants UCDHS IPHI and its affiliates a non-exclusive, worldwide, royalty-free license to use the CONTENT for the purpose of the PROJECT. ENTITY is responsible for obtaining all rights, permissions, licenses and consents required to furnish CONTENT to UCDHS IPHI.

15. PROJECT DATA (Not Protected Health Information)

ENTITY grants UCDHS IPHI a non-exclusive, perpetual, irrevocable, fully-paid-up, royalty free license to use data derived from ENTITY's Exhibit B ("**DATA**") for business purposes. ENTITY further grants UCDHS IPHI the right to (i) use DATA in any aggregate or statistical products or reports; (ii) transfer and/or disclose DATA; (iii) provide DATA to a third party for analytical purposes; (iv) use DATA to compare with other organizations' DATA within the same industry or group; and/or (v) disclose DATA in summary reports that shows, displays or indicates ENTITY's information from Exhibit B in relative comparison to other organizations' DATA. DATA shall, in no event, be considered confidential information of ENTITY or UCDHS IPHI.

16. INDEMNIFICATION

Each PARTY shall defend, indemnify and hold the other PARTY, its officers, employees and AGENTS harmless from and against any and all liability, loss, expense (including reasonable attorneys' fees), or claims for injury or damages arising out of the performance of this AGREEMENT, including use of CONTENT and/or DATA, but only in proportion to, and to the extent such liability, loss, expense, attorneys' fees, or claims for injuries or damages, are caused by, or result from, the negligent or intentional acts or omissions of the other PARTY, its officers, agents or employees.

17. LIMITATION OF LIABILITY

IN NO EVENT SHALL EITHER PARTY OR THEIR AGENTS BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, EXEMPLARY, PUNITIVE, DIRECT, INDIRECT OR SPECIAL DAMAGES OF ANY NATURE ARISING FROM BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE OR ANY OTHER LEGAL THEORY, WHETHER IN TORT OR CONTRACT, EVEN IF THE PARTY HAS BEEN APPRISED OF THE LIKELIHOOD OF SUCH DAMAGES OCCURRING, INCLUDING WITHOUT LIMITATION, DAMAGES FROM INTERRUPTION OF BUSINESS, LOSS OF INCOME OR OPPORTUNITIES, LOSS OF USE OF THE UCDHS IPHI PROJECT SERVICES, LOSS OF DATA, COST OF RECREATING DATA OR COST OF CAPITAL. THIS SECTION STATES EACH PARTY'S SOLE REMEDY FOR HARM UNDER THIS AGREEMENT WHATSOEVER, UNDER CONTRACT OR TORT LAW. NOTHING IN THIS SECTION SHALL LIMIT EITHER PARTY'S RIGHT TO SEEK INJUNCTIVE OR OTHER EQUITABLE RELIEF.

18. RELATIONSHIP OF PARTIES

In making and performing this AGREEMENT, the PARTIES are and shall act at all times as independent contractors, and nothing contained herein shall be construed or implied to create an agency, association, partnership or joint venture between the PARTIES. At no time shall either PARTY make commitments or incur any charges or expenses for or in the name of the other PARTY.

19. GOVERNING LAW

This AGREEMENT shall be governed by and enforced under the laws of the State of California.

20. EXECUTION

IN WITNESS WHEREOF, and intending to be legally bound, the PARTIES have caused this AGREEMENT to be executed by their duly authorized representatives as of the last date signed below ("**EFFECTIVE DATE**"):

For ENTITY:	For UCDHS IPHI:
By:	By:
Name:	Michael J. Hughes
Title:	Assistant Director, UCDHS IPHI
Date:	Date:

EXHIBIT A

HIE Ready Requirements

General Requirements

EHR Vendor, HIO, HIE Technology Vendor, or other ENTITY to provide an interface for the application instance operated for the physician or group offered as *HIE Ready* (“***HIE Ready***”), which is priced, quoted and sold including:

- Interface executables and documentation
- Delivered at or before the time of EHR software load, if ordered with EHR implementation, or
- Delivered within a commercially reasonable time after receipt of order, if ordered separately
- Interface messaging functionality that supports the message type requirements below
- Triggers embedded in the application that support the workflow functionality requirements below
- An exception queue capability that the provider can manage
- Level 2 interface support to HIO or interface contractor

Implementation and Support

Implementation will be provided by the HIO or interface contractor and will include:

- Establishing secure connectivity between HIO and EHR interface
- Testing and mapping of individual interfaces
- Ongoing Level 1 interface support

Transport

The EHR and/or HIO will utilize transport protocols appropriate to the type and nature of data being transmitted and will be secured as required by the Health Insurance Portability Accountability Act. The EHR Vendor and HIO will mutually agree on the transport protocols and encryption processes at the time of implementation.

EXHIBIT B**Matrix I – Ambulatory EHR**

Product Name: _____ Version Number: _____

The preferred version of HL7 that California is focused on supporting is version 2.5.1. We recognize that not all vendors currently support this version, so we are also accepting, at this time, interfaces which conform to the HL7 version 2.3.1 specification. In the right-hand columns we are asking the vendor to list:

- **YES, as Shown (Give Version)** If you produce or consume the message with the trigger shown, please indicate which HL7 version.
- **Message, Version, & Trigger?** If you produce or consume a message that performs the same or similar function as the message and trigger shown, please note the message, trigger, and HL7 version.
- **If not now, when?** If you do not currently produce or consume the message and trigger indicated in either of the previous columns, please note when you expect to accommodate the message indicated. NO PLAN (to do this) is an acceptable answer.

Matrix I, Section 1: HL7 Messages Inbound to EHR

The EHR receives and consumes from the HIE (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. Messages may be consumed in different ways depending on the EHR's operation and workflows. It is not the intention of this specification to be prescriptive on how these messages will be consumed, only that they be received and used in a manner that fits with the EHR's intended workflows.

Topic	Preferred Message & Trigger	Do You Consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.1 Receive ADT Messages	A.1.1 ADT^A01 Hospital Admission			
	A.1.2 ADT^A03 Hospital Discharge			
	A.1.3 ADT^A04 Emergency Registration			
	A.1.4 ADT^A08 Demographic Update			
	A.1.5 ADT^A40 Patient Merge			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.2 Receive HL7 Lab Results as Structured Data	A.2.1 ORU^R01 Store discrete value and text fields			
	A.2.2 Can consume LOINC test and analyte codes (required for Public Health MU reporting)			
	A.2.3 Can use SNOMED-encoded results			
	A.2.4 Appropriately handle HL7 “no growth” and “preliminary” result messages and update the order status appropriately (OBR Result Status = I, S, A, P – and, depending upon usage, R)			
A.3 Receive HL7 Radiology Report	A.3.1 ORU^R01 Receive Radiology Report as HL7 ORU or MDM and file into the proper place in the EHR			
A.4 Receive Corrected and Canceled HL7 Result Messages	A.4.1 Appropriately handle HL7 result correction messages (OBR Result Status = C) and order cancel messages received (OBR Result Status = X) and update the order status appropriately based on the message			
A.5 Receive HL7 Text Reports: (e.g., H&P, ECG, Discharge Summary, Colonoscopy Report, Progress Notes)	A.5.1 MDM^T02: Original + content			
	A.5.2 MDM^T04: Status change + content			
	A.5.3 MDM^T06: Addendum + content			
	A.5.4 MDM^T08: Edit + content			
	A.5.5 MDM^T10: Replace + content			
	A.5.6 ORU^R01: Alternative method for receiving text reports (result status is in OBR)			
A.6 Receive HL7 Referral Request	A.6.1 REF^I12 Delivered to Provider in-box (should be able to handle RF1, DG1, AL1, OBR, and OBX segments). ORM^O01 may be used as an alternative	[Indicate which message & trigger]		

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.7 Receive HL7 Referral Response	A.7.1 RRI^I12 Acknowledge Referral Request sent from the EHR (see HL7 Messages outbound)			
A.8 Receive HL7 Request for Appointment	A.8.1 SRM^S01 Request New Appointment (please note if message is routed to the in-box, or whether the EHR can auto-book and acknowledge with an SIU^S12)			
A.9 Receive and Consume Summary of Care Document (CCD)	A.9.1 Receive and store a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	
	A.9.2 Consume the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification			
	A.9.3 Consume the discrete and textual sections of the CCD as detailed in the CCD specification available at http://www.interopwg.org/documents/request.html including current medications			
	A.9.4 Receive CCD via Direct Project standards			
	A.9.5 Receive CCD via IHE XDS.b standards as a Document Consumer			

Matrix I, Section 2: HL7 Messages Outbound from EHR to HIE or Others

The EHR correctly generates and transmits to the HIE (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. It is not the intention of this specification to be prescriptive on how these messages will be consumed or otherwise dealt with by the receiver, only that they be received and acknowledged in an appropriate manner, and that these messages can be managed by the receiver's workflows.

Topic	Preferred Message & Trigger	Do you produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.1 Send Patient Encounter, Person Maintenance, and Patient Merge ADT Message	B.1.1 ADT^A04 Register Patient, Automatically generated upon completion of a registration process			
	B.1.2 ADT^A04 (additional detail) EHR provides a mechanism for the user to mark a visit as "protected" and will transmit the protected status at the patient level in the PV1 segment			
	B.1.3 ADT^A08 Update Patient Info			
	B.1.4 ADT^A31 - Person Update			
	B.1.5 ADT^A40 - Merge Patient			
B.2 Create and Send Order	B.2.1 ORM^O01 Create and transmit a properly formatted HL7 order (lab, radiology, other ancillary services)			
	B.2.2 For laboratory orders, the California "ELINCS" specification is supported			
	B.2.3 The ORM message allows a minimum of 3 "Copy to" providers			
B.3 Create and send HL7 Master File Updates for Providers and Locations	B.3.1 MFN^M02 Add/change/deactivate provider			
	B.3.2 MFN^M05 Update location			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.4 Create and Send Appointment Notification	B.4.1 SIU^S12 (May be used to determine if the patient referenced in the appointment has information in the HIE)			
B.5 Create and Send Referral Request	B.5.1 REF^I12 Provide for the automatic transmission of the referral message. ORM^O01 also accepted at this time	[Indicate which message & trigger]		
B.6 Create and Send Referral Response	B.6.1 RRI^I12 Acknowledge Referral Request			
B.7 Create and Send HL7 Result Records to Document in-Office or Reference Testing	B.7.1 ORU^R01 Laboratory			
	B.7.2 ORU^R01 Radiology / Ultrasound			
	B.7.3 MDM ^T02 Transcription			
B.8 Send Text Reports: (e.g., H&P, Visit Summary, Progress Notes, Chart Notes, Consult Notes)	B.8.1 MDM^T02: Original + content			
	B.8.2 MDM^T04: Status change + content			
	B.8.3 MDM^T06: Addendum + content			
	B.8.4 MDM^T08: Edit + content			
	B.8.5 MDM^T10: Replace + content			
	B.8.6 ORU^R01: Alternative method for sending text reports (result status is in OBR)			
B.9 Create & Send Immunization Messages.	B.9.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) Code Set CVX - Vaccines Administered, July 30, 2009 version			
B.10 Automatically Trigger Creation of the CCD	B.10.1 Provide a configurable ability to automatically create and transmit the CCD. For details on the CCD, see specification below		[List which events can trigger production of the CCD]	
B.11 Single Sign-on (SSO) with HIE	B.11.1 EHR produces a SAML 2.0 authentication token certifying the user when calling out to the HIE.			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.11 Single Sign-on (SSO) with HIE	B.11.2 EHR provides authorization criteria as required by California within the SAML token			
B.12 Transfer Context and Control to HIE within EHR	B.12.1 EHR provides the ability to view content from an external web-based source such as an HIE within the framework of the EHR (e.g., a window inside the EHR), and will transfer the context of viewing to the external source through the URL as defined by the external source		[Provide specifics of capabilities including context objects transferred]	
B.13 Create and Send CCD	B.13.1 Create the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	
	B.13.2 Create and transmit to the HIE a properly formatted CCD based on the CCD specification at http://www.interopwg.org/documents/request.html .			
	B.13.3 Send CCD via Direct Project standards			
	B.13.4 Send CCD via IHE XDS.b standards as a Document Source or Integrated Document Source Repository			
B.14 Providing Electronic Summary to Patients	B.14.1 If via a CCD (see above), the EHR provides a viewer or style sheet so that the patient can read the contents of the electronic file provided. If not a CCD, please note what standard and format is used (e.g., CCR, Blue Button, text-only, etc.)			

Matrix I, Section 3: Approach to Interfaces & Hosting

Interfaces and Hosting	Yes / No
Interface is integral to the EHR software. No additional hardware, software, or hosting components required.	
Interface is a separate software component. Software costs are included in the interface cost, but additional hardware may be required.	
Interface is a separate appliance. Hardware and software costs are included in the interface cost.	
Interface is a separate hosted service. Software and hosting services are included in the interface cost.	
Interface is a separate hosted service. Software is included in the interface cost however a hosting company MAY charge extra.	

ENTITY-EHR Vendor Name: _____

HIE Ready Point of Contact Information:

Name: _____ Phone: _____

Email: _____ Other: _____

Pricing Details:

ENTITY-EHR Vendor catalog *HIE Ready* price per instance in California for any client on maintenance with ENTITY-EHR Vendor and on the currently supported product version for items listed above in the "YES, as Shown" column, Matrix I: \$ _____

Annual Maintenance cost to the client: \$ _____

Additional explanation of pricing if any: _____

Matrix II – Hospital Electronic Medical Record (EMR/EHR)

Product Name: _____ Version Number: _____

The preferred version of HL7 that California is focused on supporting is version 2.5.1. We recognize that not all vendors currently support this version, so we are also accepting, at this time, interfaces which conform to the HL7 version 2.3.1 specification. In the right-hand columns we are asking the vendor to list:

- **YES - as Shown (Give Version)** If you produce or consume the message with the trigger shown, please indicate which HL7 version.
- **Message, Version, & Trigger?** If you produce or consume a message that performs the same or similar function as the message and trigger shown, please note the message, trigger, and HL7 version.
- **If not now, when?** If you do not currently produce or consume the message and trigger indicated in either of the previous columns, please note when you expect to accommodate the message indicated. NO PLAN (to do this) is an acceptable answer.

Matrix II, Section 1: HL7 Messages Inbound to EMR/EHR

The EMR/EHR receives and consumes from the HIE (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. Messages may be consumed in different ways depending on the EMR/EHR's operation and workflows. It is not the intention of this specification to be prescriptive on how these messages will be consumed, only that they be received and used in a manner that fits with the EMR/EHR's intended workflows.

Topic	Preferred Message & Trigger	Do you consume this message?		
		YES, as shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages	A.1.1 ADT^A04 Register Patient from Ambulatory or ED setting.			
	A.1.2 ADT^A08 Update Patient Info			
	A.1.3 ADT^A31 Person Update			
	A.1.4 ADT^A40 Merge Patient			
	A.1.5 ADT^A01 Other Hospital Admission			
	A.1.6 ADT^A03 Other Hospital Discharge			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you consume this message?		
		YES, as shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.2 Receive HL7 Lab Results as Structured Data	A.2.1 ORU^R01 Store discrete value and text fields			
	A.2.2 Can consume LOINC test and analyte codes			
	A.2.3 Can use SNOMED-encoded results			
	A.2.4 Appropriately handle HL7 “no growth” and “preliminary” result messages and update the order status appropriately (OBR Result Status = I, S, A, P – and, depending upon usage, R)			
A.3 Receive HL7 Radiology Report	A.3.1 ORU^R01 Receive Radiology Report as HL7 ORU or MDM and file into the proper place in the EMR/EHR			
A.4 Receive Corrected and Canceled HL7 Result Messages	A.4.1 Appropriately handle HL7 result correction messages (OBR Result Status = C) and order cancel messages received (OBR Result Status = X) and update the order status appropriately based on the message			
A.5 Receive HL7 Text Reports: (e.g., H&P, ECG, Discharge Summary, H&P, Visit Summary, Progress Notes, Consult Notes, Other Hospital Discharge Summary, etc.)	A.5.1 MDM^T02: Original + content			
	A.5.2 MDM^T04: Status change + content			
	A.5.3 MDM^T06: Addendum + content			
	A.5.4 MDM^T08: Edit + content			
	A.5.5 MDM^T10: Replace + content			
	A.5.6 ORU^R01: Alternative method for receiving text reports (result status is in OBR)			
A.6 Receive HL7 Referral Request (may be used for preadmit)	A.6.1 REF^I12 Delivered to Provider in-box (should be able to handle RF1, DG1, AL1, OBR, and OBX segments). ORM^O01 may be used as an alternative	[Indicate which message & trigger]		

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you consume this message?		
		YES, as shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.7 Receive HL7 Referral Response	A.7.1 RRI^I12 Acknowledge Referral Request sent from an HIE (see HL7 Messages outbound)			
A.8 Receive HL7 Request for Appointment (ancillary services)	A.8.1 SRM^S01 Request New Appointment (please note if message is routed to the in-box, or whether the EMR/EHR can auto-book and acknowledge with an SIU^S12			
A.9 Receive and Consume Summary of Care Document (CCD)	A.9.1 Receive and store a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	
	A.9.2 Consume the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification			
	A.9.3 Consume the discrete and textual sections of the CCD as detailed in the CCD specification available at http://www.interopwg.org/documents/request.html including current medications			
	A.9.4 Receive CCD via Direct Project standards			
	A.9.5 Receive CCD via IHE XDS.b standards as a Document Consumer			
A.10 Receive Electronic Orders	A.10.1 ORM^O01 Receive from an HIE or other source a properly formatted HL7 order (lab, radiology, other ancillary services)			
	A.10.2 For laboratory orders, the California "ELINCS" specification is supported			
	A.10.3 The EMR/EHR supports an ORM message with 3 or more "Copy to" providers			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you consume this message?		
		YES, as shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.11 Receive/ Consume HL7 Master File Updates for Providers and Locations	A.11.1 MFN^M02 Add/change/deactivate provider			
	A.11.2 MFN^M05 Update location			

Matrix II, Section 2: HL7 Messages Outbound from EMR/EHR to HIE or Others

The EMR/EHR correctly generates and transmits to the HIE (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. It is not the intention of this specification to be prescriptive on how these messages will be consumed or otherwise dealt with by the receiver, only that they be received and acknowledged in an appropriate manner, and that these messages can be managed by the receiver's workflows.

Topic	Preferred Message & Trigger	Do You Produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.1 Send ADT Messages	B.1.1 ADT^A01 Hospital Admission			
	B.2.1 ADT^A03 Hospital Discharge			
	B.1.3 ADT^A04 Emergency Registration			
	B.1.4 ADT^A08 Demographic Update			
	B.1.5 ADT^A40 Patient Merge			
	B.1.6 ADT^A04 Outpatient Visit Registration			
	B.1.7 ADT^A31 Person Update			
B.2 Create and Send Order	B.2.1 ORM^O01 Transmit a properly formatted HL7 order (lab, radiology, other ancillary services)			
	B.2.2 For laboratory orders the California "ELINCS" specification is supported			
	B.2.3 The ORM message allows a minimum of 3 "Copy to" providers			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.3 Create and Send HL7 Master File Updates for Providers and Locations	B.3.1 MFN^M02 Add/change/deactivate provider			
	B.3.2 MFN^M05 Update location			
B.4 BLANK	B.4 PURPOSELY LEFT BLANK IN MATRIX II	N/A	N/A	N/A
B.5 Create and Send Referral Request	B.5.1 REF^I12, or ORM^O01 as an alternative	[Indicate which message & trigger]		
B.6 Create and Send Referral Response	B.6.1 RRI^I12 Acknowledge Referral Request received from others			
B.7 Create and Send HL7 Lab Results as Structured Data	B.7.1 ORU^R01 Sends discrete value and text fields			
	B.7.2 Can send LOINC test and analyte codes (required for Public Health MU reporting)			
	B.7.3 Supports SNOMED-encoded results			
	B.7.4 Appropriately handle HL7 “no growth” and “preliminary” result messages and update the order status appropriately (OBR Result Status = I, S, A, P – and, depending upon usage, R)			
B.8 Send HL7 Text Reports: (e.g., H&P, ECG, Discharge Summary, Colonoscopy Report, Progress Notes, etc.)	B.8.1 MDM^T02: Original + content			
	B.8.2 MDM^T04: Status change + content			
	B.8.3 MDM^T06: Addendum + content			
	B.8.4 MDM^T08: Edit + content			
	B.8.5 MDM^T10: Replace + content			
	B.8.6 ORU^R01: Alternative method for sending text reports (result status is in OBR)			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.9 Create & Send Immunization Messages	B.9.1 Transmit a VXU^V04 (2.3.1 or 2.5.1 required for MU) Code Set CVX - Vaccines Administered, July 30, 2009 version			
B.10 Automatically Trigger Creation of the CCD	B.10.1 Provide a configurable ability to automatically create and transmit the CCD. For details on the CCD, see specification above		[List which events can trigger production of the CCD]	
B.11 Single Sign-on (SSO) with HIE	B.11.1 EMR/EHR produces a SAML 2.0 authentication token certifying the user when calling out to the HIE			
	B.11.2 EMR/EHR provides authorization criteria as required by California within the SAML token			
B.12 Transfer Context and Control to HIE within EMR/EHR	B.12.1 EMR/EHR provides the ability to view content from an external web-based source such as an HIE within the framework of the EMR/EHR (e.g., a window inside the EMR/EHR), and will transfer the context of viewing to the external source through the URL as defined by the external source		[Provide specifics of capabilities including context objects transferred]	
B.13 Generate and Send Summary of Care Document (CCD)	B.13.1 Generate and Send the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	
	B.13.2 Generate and Send the discrete and textual sections of the CCD as detailed in the CCD specification available at http://www.interopwg.org/documents/request.html including current medications			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Produce this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.13 Generate and Send Summary of Care Document (CCD)	B.13.3 Send the CCD via Direct Project standards			
	B.13.4 Send the CCD via IHE XDS.b standards as a Document Source or Integrated Document Source Repository			
B.14 Providing Electronic Summary to Patients	B.14.1 If via a CCD (see above), the EMR/EHR provides a viewer or style sheet so that the patient can read the contents of the electronic file provided. If not a CCD, please note what standard and format is used (e.g., CCR, Blue Button, text-only, etc.)			
B.15 Send HL7 Radiology Report	B.15.1 ORU^R01 Send Radiology Report as HL7 ORU or MDM			
B.16 Send Corrected and Canceled HL7 Result Messages	B.16.1 Send HL7 result correction messages (OBR Result Status = C) and send order cancel messages (OBR Result Status = X)			

Matrix II, Section 3: Approach to Interfaces & Interoperability

Interfaces and Hosting	Yes / No
Interface is integral to the EHR software. No additional hardware, software, or hosting components required.	
Interface is a separate software component. Software costs are included in the interface cost, but additional hardware may be required.	
Interface is a separate appliance. Hardware and software costs are included in the interface cost.	
Interface is a separate hosted service. Software and hosting services are included in the interface cost.	
Interface is a separate hosted service. Software is included in the interface cost however a hosting company MAY charge extra.	

HIE Ready 1.2

ENTITY-EMR/EHR Vendor Name: _____

HIE Ready Point of Contact Information:

Name: _____ Phone: _____

Email: _____ Other: _____

Pricing Details:

ENTITY-EMR/EHR Vendor catalog *HIE Ready* price per instance in California for any client on maintenance with ENTITY-EMR/EHR Vendor and on the currently supported product version for items listed above in the "YES, as Shown" column, Matrix II: \$ _____

Annual Maintenance cost to the client: \$ _____

Additional explanation of pricing if any: _____

Matrix III – Health Information Exchange Organization (HIO)

Product Name: _____ Version Number: _____

The preferred version of HL7 that California is focused on supporting is version 2.5.1. We recognize that not all HIOs currently support this version, so we are also accepting, at this time, interfaces which conform to the HL7 version 2.3.1 specification. In the right-hand columns we are asking the HIO to list:

- **YES - as Shown (Give Version)** If you produce or consume the message with the trigger shown, please indicate which HL7 version.
- **Message, Version, & Trigger?** If you produce or consume a message that performs the same or similar function as the message and trigger shown, please note the message, trigger, and HL7 version.
- **If not now, when?** If you do not currently produce or consume the message and trigger indicated in either of the previous columns, please note when you expect to accommodate the message indicated. NO PLAN (to do this) is an acceptable answer.

Matrix III, Section 1: HL7 Messages Outbound from HIO

The HIO sends to the EHR (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. Messages may be consumed in different ways depending on the recipient systems' operation and workflows. It is not the intention of this specification to be prescriptive on how these messages will be consumed by the recipient, only that they be sent.

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.1 Send ADT Messages	A.1.1 ADT^A01 Hospital Admission			
	A.2.1 ADT^A03 Hospital Discharge			
	A.1.3 ADT^A04 Emergency Registration			
	A.1.4 ADT^A08 Demographic Update			
	A.1.5 ADT^A40 Patient Merge			
	A.1.6 ADT^A04 Ambulatory Visit Registration			
	A.1.7 ADT^A31 Person Update			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.2 Send HL7 Lab Results as Structured Data	A.2.1 ORU^R01 Sends discrete value and text fields			
	A.2.2 Can send LOINC test and analyte codes (required for Public Health MU reporting)			
	A.2.3 Supports SNOMED-encoded results			
	A.2.4 Appropriately handle HL7 “no growth” and “preliminary” result messages and update the order status appropriately (OBR Result Status = I, S, A, P – and, depending upon usage, R)			
A.3 Send HL7 Radiology Report	A.3.1 ORU^R01 Send Radiology Report as HL7 ORU or MDM			
A.4 Send Corrected and Canceled HL7 Result Messages	A.4.1 Appropriately forward HL7 result correction messages (OBR Result Status = C) and send order cancel messages (OBR Result Status = X)			
A.5 Send HL7 Text Reports: (e.g., H&P, ECG, Discharge Summary, Colonoscopy Report, Progress Notes)	A.5.1 MDM^T02: Original + content			
	A.5.2 MDM^T04: Status change + content			
	A.5.3 MDM^T06: Addendum + content			
	A.5.4 MDM^T08: Edit + content			
	A.5.5 MDM^T10: Replace + content			
	A.5.6 ORU^R01: Alternative method for sending text reports (result status is in OBR)			
A.6 Send HL7 Referral Request	A.6.1 REF^I12, or ORM^O01 as an alternative	[Indicate which message & trigger]		
A.7 Send HL7 Referral Response	A.7.1 RRI^I12 Acknowledge Referral Request sent from the EHR (see HL7 Messages outbound)			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.8 Send HL7 Request for Appointment	A.8.1 SRM^S01 Request New Appointment			
A.9 Generate and Send Summary of Care Document (CCD)	A.9.1 Generate and Send the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	
	A.9.2 Generate and Send the discrete and textual sections of the CCD as detailed in the CCD specification available at http://www.interopwg.org/documents/request.html including current medications			
	A.9.3 Send the CCD via Direct Project standards			
	A.9.4 Send the CCD via IHE XDS.b standards as a Document Source or Integrated Document Source Repository			
	A.9.5 Forward a CCD received from an EHR or other system to a designated recipient			
A.10 Send Immunization Reports to Registry	A.10.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) [Code Set CVX - Vaccines Administered, July 30, 2009 version]			
	A.10.2 Forward properly formatted immunization messages received from an EHR or other system to appropriate immunization registry			
	A.10.3 The capability to accumulate numerous immunization records and submit them to immunization registry in batch format			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.11 Create and Send or Forward Order	A.11.1 ORM^O01 Forward a properly formatted HL7 order received from an EHR or other system (lab, radiology, other ancillary services)			
	A.11.2 ORM^O01 Generate from HIE services a properly formatted HL7 order (lab, radiology, other ancillary services)			
	A.11.3 For laboratory orders generated from HIE services, the California “ELINCS” specification is supported			
	A.11.4 For orders generated from HIE services, the ORM message allows a minimum of 3 “Copy to” providers			

Matrix III, Section 2: HL7 Messages Inbound from EHRs and Other Data Suppliers to HIO

The HIO will receive, store, and forward, as appropriate to the particular use case and workflow, properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. It is not the intention of this specification to be prescriptive on how these messages will be consumed or otherwise dealt with by the receiving HIO, only that they be received and acknowledged by the HIO in an appropriate manner, and that these messages can be managed by the HIO’s workflows.

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages	B.1.1 ADT^A04 Register Patient from Ambulatory setting			
	B.1.2 ADT^A04 (additional detail) HIO to correctly support a visit marked as “protected” in the PV1 segment			
	B.1.3 ADT^A08 Update Patient Info			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages	B.1.4 ADT^A31 Person Update			
	B.1.5 ADT^A40 Merge Patient			
	B.1.6 ADT^A01 Hospital Admission			
	B.1.7 ADT^A03 Hospital Discharge			
B.2 Receive Orders	B.2.1 ORM^O01 Receive from an EHR a properly formatted HL7 order (lab, radiology, other ancillary services)			
	B.2.2 For laboratory orders, the California "ELINCS" specification is supported			
B.3 Consume HL7 Master File Updates for Providers and Locations	B.3.1 MFN^M02 Add/change/deactivate provider			
	B.3.2 MFN^M05 Update location			
B.4 Receive Appointment Notification	B.4.1 SIU^S12 (May be used to determine if the patient referenced in the appointment has information in the HIE)			
B.5 Receive Referral Request	B.5.1 REF^I12 Referral message. ORM^O01 also accepted at this time	[Indicate which message & trigger]		
B.6 Receive Referral Response	B.6.1 RRI^I12 Acknowledge Referral Request			
B.7 Receive/ Consume HL7 Result Records	B.7.1 ORU^R01 Laboratory			
	B.7.2 ORU^R01 Radiology / Ultrasound			
	B.7.3 MDM ^T02 Transcription			
B.8 Receive/ Consume Text Reports (e.g., H&P, visit summary, progress notes, chart notes, consult notes)	B.8.1 MDM^T02: Original + content			
	B.8.2 MDM^T04: Status change + content			
	B.8.3 MDM^T06: Addendum + content			
	B.8.4 MDM^T08: Edit + content			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.8 Receive/ Consume Text Reports (e.g., H&P, visit summary, progress notes, chart notes, consult notes)	B.8.5 MDM^T10: Replace + content			
	B.8.6 ORU^R01: Alternative method for receiving text reports (result status is in OBR)			
B.9 Receive/ Consume Immunization Messages	B.9.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) Code Set CVX - Vaccines Administered, July 30, 2009 version			
B.10 BLANK	B.10 PURPOSELY LEFT BLANK ON MATRIX III	N/A	N/A	N/A
B.11 Single Sign-on (SSO) with HIE	B.11.1 HIO supports SAML 2.0 authentication for authorized users			
	B.11.2 HIO consume authorization criteria as required by California within the SAML token.			
B.12 Transfer Context to HIO from EHR	B.12.1 HIO provides the ability to receive portal control from the EHR via a specific API or URL with context (provider, patient, subject) and will automatically query and display the requested subject.		[Provide specifics of capabilities including context objects transferred]	
B.13 Receive and Consume CCD	B.13.1 Receive and store a CCD C32 document as specified in the CCD Release 2.1 as further refined by HITSP in its component specification.		[List the C32 sections supported]	
	B.13.2 Consume the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification.			
	B.13.3 Consume a properly formatted CCD based on the CCD specification at http://www.interopwg.org/docu ments/request.html			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.13 Receive and Consume CCD	B.13.4 Receive the CCD via Direct Project standards			
	B.13.5 Request and receive the CCD via IHE XDS.b standards as a Document Consumer			

Matrix III, Section 3: Approach to Interfaces and Interoperability and Business Relationship

Basic HIO Information

HIO Name: _____

HIE Tool Vendor Name: _____

Points of Contact

HIE Ready Point of Contact (for vendors):

Name: _____ Phone: _____

Email: _____ Other: _____

Executive Director Point of Contact:

Name: _____ Phone: _____

Email: _____ Other: _____

Business Development Director (Person with whom one can establish a business relationship):

Name: _____ Phone: _____

Email: _____ Other: _____

HIO Demographics

Geographic Coverage:

Number of providers within the geographic region: _____

Number of hospitals within the geographic region: _____

HIE Ready 1.2

Onboarding & Pricing (fill out or provide link or attachment as appropriate)

Link or contact information for an ambulatory EHR user wishing to establish a business relationship to exchange data with the HIO:

Name: _____ Phone: _____

Email: _____ Other: _____

Pricing Details:

ENTITY-HIO catalog *HIE Ready* Interface Fee charged by ENTITY-HIO to implement and test an ambulatory or inpatient EHR to the base level for items listed above in the "YES, as Shown" column, Matrix III:

\$_____

Ongoing interface fee structure, if any:

\$_____

Description/definition of interface fee structure: _____

Matrix IV- Health Information Exchange (HIE) Vendor

Product Name: _____ Version Number: _____

The preferred version of HL7 that California is focused on supporting is version 2.5.1. We recognize that not all HIE vendors may support this version, so we are also accepting, at this time, interfaces which conform to the HL7 version 2.3.1 specification. In the right-hand columns we are asking the vendor to list:

- **YES - as Shown (Give Version)** If you produce or consume the message with the trigger shown, please indicate which HL7 version.
- **Message, Version, & Trigger?** If you produce or consume a message that performs the same or similar function as the message and trigger shown, please note the message, trigger, and HL7 version.
- **If not now, when?** If you do not currently produce or consume the message and trigger indicated in either of the previous columns, please note when you expect to accommodate the message indicated. NO PLAN (to do this) is an acceptable answer.

Matrix IV, Section 1: HL7 Messages Outbound from HIE Product

The HIE product sends to the EHR (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. Messages may be consumed in different ways depending on the recipient systems' operation and workflows. It is not the intention of this specification to be prescriptive on how these messages will be consumed by the recipient, only that they be sent.

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.1 Send ADT Messages	A.1.1 ADT^A01 Hospital Admission			
	A.2.1 ADT^A03 Hospital Discharge			
	A.1.3 ADT^A04 Emergency Registration			
	A.1.4 ADT^A08 Demographic Update			
	A.1.5 ADT^A40 Patient Merge			
	A.1.6 ADT^A04 Ambulatory Visit Registration			
	A.1.7 ADT^A31 Person Update			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.2 Send HL7 Lab Results as Structured Data	A.2.1 ORU^R01 Sends discrete value and text fields			
	A.2.2 Can send LOINC test and analyte codes (required for Public Health MU reporting)			
	A.2.3 Supports SNOMED-encoded results			
	A.2.4 Appropriately handle HL7 “no growth” and “preliminary” result messages and update the order status appropriately (OBR Result Status = I, S, A, P – and, depending upon usage, R)			
A.3 Send HL7 Radiology Report	A.3.1 ORU^R01 Send Radiology Report as HL7 ORU or MDM			
A.4 Send Corrected and Canceled HL7 Result Messages	A.4.1 Appropriately forward HL7 result correction messages (OBR Result Status = C) and send order cancel messages (OBR Result Status = X)			
A.5 Send HL7 Text Reports: (e.g., H&P, ECG, Discharge Summary, Colonoscopy Report, Progress Notes)	A.5.1 MDM^T02: Original + content			
	A.5.2 MDM^T04: Status change + content			
	A.5.3 MDM^T06: Addendum + content			
	A.5.4 MDM^T08: Edit + content			
	A.5.5 MDM^T10: Replace + content			
	A.5.6 ORU^R01: Alternative method for sending text reports (result status is in OBR)			
A.6 Send HL7 Referral Request	A.6.1 REF^I12, or ORM^O01 as an alternative	[Indicate which message & trigger]		
A.7 Send HL7 Referral Response	A.7.1 RRI^I12 Acknowledge Referral Request sent from the EHR (see HL7 Messages outbound)			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.8 Send HL7 Request for Appointment	A.8.1 SRM^S01 Request New Appointment			
A.9 Generate and Send Summary of Care Document (CCD)	A.9.1 Generate and Send the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	
	A.9.2 Generate and Send the discrete and textual sections of the CCD as detailed in the CCD specification available at http://www.interopwg.org/documents/request.html including current medications			
	A.9.3 Send the CCD via Direct Project standards			
	A.9.4 Send the CCD via IHE XDS.b standards as a Document Source or Integrated Document Source Repository			
	A.9.5 Forward a CCD received from an EHR or other system to a designated recipient			
A.10 Send Immunization Reports to Registry	A.10.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) [Code Set CVX - Vaccines Administered, July 30, 2009 version]			
	A.10.2 Forward properly formatted immunization messages received from an EHR or other system to appropriate immunization registry			
	A.10.3 The capability to accumulate numerous immunization records and submit them to immunization registry in batch format			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do You Send this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
A.11 Create and Send or Forward Order	A.11.1 ORM^O01 Forward a properly formatted HL7 order received from an EHR or other system (lab, radiology, other ancillary services)			
	A.11.2 ORM^O01 Generate from HIE services a properly formatted HL7 order (lab, radiology, other ancillary services)			
	A.11.3 For laboratory orders generated from HIE services, the California “ELINCS” specification is supported			
	A.11.4 For orders generated from HIE services, the ORM message allows a minimum of 3 “Copy to” providers			

Matrix IV, Section 2: HL7 Messages Inbound from EHRs and Other Data Suppliers to HIE Product

The HIE product will receive, store, and forward, as appropriate to the particular use case and workflow, properly formatted HL7 ADT, MDM, MFN, ORM, ORU, REF, RRI, SIU, SRM and VXU messages of version 2.3.1, 2.5.1, or 3.1 as noted. It is not the intention of this specification to be prescriptive on how these messages will be consumed or otherwise dealt with by the receiving HIE product, only that they be received and acknowledged in an appropriate manner, and that these messages can be managed by the HIE product’s workflows.

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages	B.1.1 ADT^A04 Register Patient from Ambulatory setting			
	B.1.2 ADT^A04 (additional detail) HIE product to correctly support a visit marked as “protected” in the PV1 segment			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages	B.1.3 ADT^A08 Update Patient Info			
	B.1.4 ADT^A31 Person Update			
	B.1.5 ADT^A40 Merge Patient			
	B.1.6 ADT^A01 Hospital Admission			
	B.1.7 ADT^A03 Hospital Discharge			
B.2 Receive Orders	B.2.1 ORM^O01 Receive from an EHR a properly formatted HL7 order (lab, radiology, other ancillary services)			
	B.2.2 For laboratory orders, the California "ELINCS" specification is supported			
B.3 Consume HL7 Master File Updates for Providers and Locations	B.3.1 MFN^M02 Add / change / deactivate provider			
	B.3.2 MFN^M05 Update location			
B.4 Receive Appointment Notification	B.4.1 SIU^S12 (May be used to determine if the patient referenced in the appointment has information in the HIE)			
B.5 Receive Referral Request	B.5.1 REF^I12 Referral message. ORM^O01 also accepted at this time	[Indicate which message & trigger]		
B.6 Receive Referral Response	B.6.1 RRI^I12 Acknowledge Referral Request			
B.7 Receive/ Consume HL7 Result Records	B.7.1 ORU^R01 Laboratory			
	B.7.2 ORU^R01 Radiology / Ultrasound			
	B.7.3 MDM ^T02 Transcription			

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.8 Receive/ Consume Text Reports (e.g., H&P, visit summary, progress notes, chart notes, consult notes)	B.8.1 MDM^T02: Original + content			
	B.8.2 MDM^T04: Status change + content			
	B.8.3 MDM^T06: Addendum + content			
	B.8.4 MDM^T08: Edit + content			
	B.8.5 MDM^T10: Replace + content			
	B.8.6 ORU^R01: Alternative method for receiving text reports (result status is in OBR)			
B.9 Receive/ Consume Immunization Messages	B.9.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) Code Set CVX - Vaccines Administered, July 30, 2009 version			
B.10 BLANK	B.10 PURPOSELY LEFT BLANK ON MATRIX IV	N/A	N/A	N/A
B.11 Single Sign-on (SSO) with HIE	B.11.1 HIE product supports SAML 2.0 authentication for authorized users			
	B.11.2 HIE product consumes authorization criteria as required by California within the SAML token.			
B.12 Transfer Context to HIE Product from EHR	B.12.1 HIE product provides the ability to receive portal control from the EHR via a specific API or URL with context (provider, patient, subject) and will automatically query and display the requested subject		[Provide specifics of capabilities including context objects transferred]	
B.13 Receive and Consume CCD	B.13.1 Receive and store a CCD C32 document as specified in the CCD Release 2.1 as further refined by HITSP in its component specification		[List the C32 sections supported]	

HIE Ready 1.2

Topic	Preferred Message & Trigger	Do you use/consume this Message?		
		YES, as Shown (Give Version)	Message, Version, & Trigger?	If not now, when?
B.13 Receive and Consume CCD	B.13.2 Consume the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification			
	B.13.3 Consume a properly formatted CCD based on the CCD specification at http://www.interopwg.org/documents/request.html			
	B.13.4 Receive the CCD via Direct Project standards			
	B.13.5 Request and receive the CCD via IHE XDS.b standards as a Document Consumer			

Matrix IV, Section 3: Approach to Interfaces and Interoperability and Business Relationship

Basic HIE Vendor Information

HIE Tool Name: _____

Points of Contact

HIE Ready Point of Contact (for HIOs, EHR vendors, other HIE vendors):

Name: _____ Phone: _____

Email: _____ Other: _____

Executive Director Point of Contact:

Name: _____ Phone: _____

Email: _____ Other: _____

Business Development Director (Person with whom one can establish a business relationship):

Name: _____ Phone: _____

Email: _____ Other: _____

APPENDIX B—Scoring Algorithms

Each vendor or organization participating in *HIE Ready* has provided information about the interoperability capabilities its offering supports. The more than 50 such capabilities are organized by the capability groups and categories found in the Buyers' Guide chart (See Matrices I-IV in the Memorandum of Understanding, above).

Capabilities Scoring

The score for a category is calculated by computing the percentage of supported capabilities in each group, averaging the percentages for all groups in a category, and scaling the result from zero to four points. Specifically, four times the mean percentage is computed and rounded to the nearest whole value.

Capability ↑	●●●●	>87.5% to 100%
	●●●	>62.5% to 87.5%
	●●	>37.5% to 62.5%
	●	>12.5% to 37.5%
	○	0% to 12.5%

For example, there is one group of five inbound capabilities and one group of five outbound capabilities for the “ADT/Demographics” category for ambulatory EHRs. If a product supports three of the inbound and four of the outbound capabilities, its score would be the average of 60% and 80%, which is 70%, which equals 3 points.

Relative Cost Scoring

HIE Ready relative costs are computed based on the information most entities provided. For this computation, each vendor or organization participating in *HIE Ready* provided cost information for the capabilities it supports. Some vendors include *HIE Ready* as part of the base cost of their offering, so their cost is \$0. However, *HIE Ready* carries some additional costs for many products. For these, the number of dollar signs is calculated by taking the mean price for all vendors as a score of 2.5, and subtracting one for each standard deviation below the mean, or adding one for each standard deviation above the mean, and rounding to the nearest whole value. Some vendors declined to set a specific price for *HIE Ready*; their relative price is listed as NP (not provided).

Updates to the Buyers' Guide and Scoring Changes

The Buyers' Guide is updated when new vendors or organizations join *HIE Ready*, or when a current vendor or organization updates its product capabilities or pricing. *This version 1.1 is just such a revision of earlier information.*

If a capability score changes, it means a vendor's product has changed. If a relative price score changes, it may mean that the vendor has changed its pricing or that new vendors have been added to the Buyers' Guide, changing the mean cost, which potentially changes each vendor's score.



An Initiative of California Health eQuality (CHeQ)

FREQUENTLY ASKED QUESTIONS

1. [What is HIE Ready?](#)
2. [Why is HIE Ready needed?](#)
3. [Do all EHRs have HIE Ready capabilities? If so, why aren't they in use?](#)
4. [Why is the Buyers' Guide needed?](#)
5. [Why would there be an extra cost if HIE Ready capabilities already exist?](#)
6. [Is HIE Ready downloadable software?](#)
7. [What are the advantages of using an EHR with the features promoted by HIE Ready?](#)
8. [Is HIE Ready a replacement for Meaningful Use or EHR certification?](#)
9. [I've heard about the EHR | HIE Interoperability Workgroup. Is HIE Ready a replacement?](#)
10. [Can't healthcare providers and organizations already exchange health information between any certified EHRs?](#)
11. [Won't the Direct Project solve this problem?](#)
12. [Are the Regional Extension Centers \(RECs\) in California participating in HIE Ready?](#)
13. [Is participation in HIE Ready available outside of California?](#)
14. [What does it cost to participate in HIE Ready?](#)
15. [If I represent a vendor, how do I get involved?](#)
16. [If I represent an HIO/HIE, how do I get involved?](#)
17. [How were HIE Ready standards developed?](#)
18. [How are the HIE Ready capabilities assessed?](#)
19. [How are the HIE Ready relative costs computed?](#)
20. [What does it mean if the capability and/or price scoring for a product changes?](#)

1. What is HIE Ready?

HIE Ready is a set of consensus standards and specifications that are available in many Electronic Health Records (EHRs) and Health Information Exchange (HIE) systems today that enable them to exchange health information critical for care delivery. *HIE Ready* is consistent with Stage 1 Meaningful Use and the current version of the Office of the National Coordinator for Health Information Technology Authorized Testing and Certification Bodies (ONC-ATCB) for EHR technology. Moving forward it also will be consistent with Stage 2 Meaningful Use and 2014 ONC-ATCB certification criteria.

2. Why is *HIE Ready* needed?

The cost and time it takes to implement bi-directional interfaces with EHRs is a major hurdle for healthcare providers. Meaningful Use provisions for Stage 1 and Stage 2 require various HIE capabilities. However, those requirements are limited and do not cover the full range of interoperability and interface features needed for robust HIE. Therefore, specifying a certified EHR is not enough to ensure it can also exchange the information needed. *HIE Ready* provides a way for healthcare providers to examine what capabilities a vendor's product has, what capabilities a Health Information Organization (HIO) offers, and/or permits healthcare providers to specify that they want full interoperability with their EHR.

3. Do all EHRs have *HIE Ready* capabilities? If so, why aren't they in use?

While most EHR systems may include the capacity to share the information specified in *HIE Ready*, it may be available through a complex list of optional components. *HIE Ready* gives healthcare providers a clear way to specify the EHR features needed for health information exchange. It also helps healthcare providers know how much interoperability will cost.

4. Why is the Buyers' Guide needed?

The Buyers' Guide helps healthcare providers choose an ambulatory EHR, inpatient EHR, HIO service, or HIE supplier best-suited to their practice environment. The Buyers' Guide also provides information to accurately compare essential interoperability features among the EHR vendors participating in *HIE Ready*.

5. Why would there be an extra cost if *HIE Ready* capabilities already exist?

Some EHRs include HIE capacities as a standard part of their products. Some EHR vendors, however, include interoperability as an option. *HIE Ready* specifies what full HIE capabilities are, but it does not require that a vendor include them in their product for free.

6. Is *HIE Ready* downloadable software?

No, *HIE Ready* describes a set of interfaces, based on HL7 standards, that should be active in an EHR system to enable essential HIE capability today. Participants in *HIE Ready* identify which elements among those CHeQ has specified are currently included in their EHR product and the cost of those elements to their customers.

7. What are the advantages of using an EHR with the features promoted by *HIE Ready*?

HIE Ready provides a set of uniform requirements for interoperability. It reduces variation of interface requirements, reduces the time required to deliver customized interfaces, and reduces the cost of those interfaces.

8. Is *HIE Ready* a replacement for Meaningful Use or EHR certification?

No. *HIE Ready* is consistent with Stage 1 and Stage 2 Meaningful Use provisions, and certification criteria for the ONC-ACTB certification program. However, it specifies additional important standards and capabilities that are not spelled out in Meaningful Use or EHR certification.

9. I've heard about the EHR | HIE Interoperability Workgroup. Is *HIE Ready* a replacement?

No. The EHR | HIE Interoperability Workgroup is a collaboration of states and vendors specifying the next generation of health information exchange standards. This is important work, but won't be available in products for some time. *HIE Ready* concentrates on current standards and on what vendors are offering today.

10. Can't healthcare providers and organizations already exchange health information between any certified EHRs?

Not necessarily. Having a certified EHR does not necessarily lead to true HIE. A certified EHR may be able to share some important health information only by faxed or scanned documents. Other certified EHRs offer a large menu of electronic exchange options. *HIE Ready* provides clear information on the interoperability and interface features that should be in place to facilitate HIE today and are available in vendor products listed. It also gives healthcare providers a simple way to ask for the interfaces they need by specifying *HIE Ready*.

11. Won't the Direct Project solve this problem?

The Federal government's Direct Project offers healthcare providers a way to quickly connect, and enables them to send and receive point-to-point health information, regardless of whether they have an EHR. While useful and a critical part of ONC's HIE initiative, the Direct Project is limited to pushing information out, but does not actually establish HIE beyond transferring documents via secure email.

12. Are the Regional Extension Centers (RECs) in California participating in HIE Ready?

Yes. *HIE Ready* was developed in collaboration with CalHIPSO, which shares the *HIE Ready* goals and specifications with its preferred vendors and asks them to participate. We are moving forward with California's other RECs as well.

13. Is participation in HIE Ready available outside of California?

Yes. Contact us at cheq@ucdmc.ucdavis.edu, with a subject of *HIE Ready*, and we will be in touch!

14. What does it cost to participate in HIE Ready?

HIE Ready is a volunteer program. It does not cost anything to join.

15. If I represent a vendor, how do I get involved?

Contact us at cheq@ucdmc.ucdavis.edu, with a subject of *HIE Ready*, and we will be in touch!

16. If I represent an HIO/HIE, how do I get involved?

Contact us at cheq@ucdmc.ucdavis.edu, with a subject of *HIE Ready*, and we will be in touch!

17. How were HIE Ready standards developed?

The Centers for Medicare and Medicaid Services defined Meaningful Use and ONC defined the certification program for EHR technology through rulemaking. The *HIE Ready* specifications represent an analysis of the technical requirements derived from Stage 1 and Stage 2 Meaningful Use, in line with ONC-ATCB certification requirements, and experience with the capabilities of current certified EHR systems. CHeQ took input from HIE leaders in California, members of the REC programs, and EHR and HIE vendors in creating the *HIE Ready* standards.

18. How are the *HIE Ready* capabilities assessed?

Each vendor or organization participating in *HIE Ready* fills out a matrix listing which of more than 50 interoperability capabilities its product(s) supports. These capabilities are grouped and categorized into the capability categories found in the Buyers' Guide. A score for a category is calculated by computing the percentage of supported capabilities in each group, averaging the percentages for all groups in a category, and scaling the result from zero to four bullets. For example, there is one group of five inbound capabilities and one group of five outbound capabilities for the "ADT/Demographics" category for ambulatory EHRs: If a product supports three of the inbound and four of the outbound capabilities, its score would be the average of 60% and 80%, which is 70% = three bullets.

19. How are the *HIE Ready* relative costs computed?

Each vendor or organization participating in *HIE Ready* lists the price for the *HIE Ready* capabilities they support. Some vendors include *HIE Ready* as part of the base cost of their offering, and their cost is \$0. However, *HIE Ready* carries some additional cost for many products. For these vendors, the number of dollar signs is calculated by taking the mean price for all vendors as a score of 2.5, and subtracting one for each standard deviation below the mean, or adding one for each standard deviation above the mean, and rounding to the nearest whole value. A small number of vendors decline to set a specific price for *HIE Ready*, and their relative price is listed as NP (not provided).

20. What does it mean if the capability and/or price scoring for a product changes?

The *HIE Ready* Buyers' Guide is updated each time a new vendor or organization joins *HIE Ready*, or each time a vendor or organization updates their product capabilities. If a capability score changes, it means a vendor's product has changed. If a relative price score changes, it may mean that the vendor has changed its pricing or that new vendors have been added to the Buyers' Guide changing the mean cost, which potentially changes each vendor's score.

